



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,676	05/21/2001	Frank L. Hall	4718US (00-0316)	1281

24247 7590 05/06/2003

TRASK BRITT  
P.O. BOX 2550  
SALT LAKE CITY, UT 84110

EXAMINER

HEINRICH, SAMUEL M

ART UNIT PAPER NUMBER

1725

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicant(s)

09/863,676

Applicant(s)

HALL, FRANK L.

Examiner

Samuel M Heinrich

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 7-12 and 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 13-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Election/Restrictions*

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-6 and 13-18, drawn to a method of coating a resist and removing it using a laser, classified in class 219, subclass 121.69.
- II. Claims 7,8-12, drawn to a semiconductor device with at least a portion of the resist removed from it, classified in class 257, subclass 1+.
- III. Claims 19 and 20, drawn to a process for roughening a substrate, classified in class 72, subclass 53 or 54.
- IV. Claims 21-23, drawn to an automolding apparatus able to remove contaminants from the surface of a resist coated article using a laser, classified in class 219, subclass 121.82.

The inventions are distinct, each from the other because of the following reasons:

Inventions group I and group II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the resist may be removed using other means including exposure and development, peeling or dissolution in a solvent.

Inventions group I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP §

Art Unit: 1725

808.01). In the instant case the different inventions the process of group III roughens the surface, while that of group I removes resist.

Inventions group I and IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the automolding system can be used to remove contaminants on the substrate surface, rather than resist material or it may be used to texture the surface.

Inventions group II and group III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the article of group II is not disclosed as textured and the process of group III may be used with articles other than semiconductor devices and have different modes of operation.

Inventions group II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the process of group IV may be used with articles other than semiconductor devices and the process of group III may use other means such as air or particles (sand-blasting, etc.) to remove the contaminants.

Inventions group III and group IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process may be preformed on articles not having a resist coating and/or using other means such as air or particles (sand-blasting, etc.), rather than a laser.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Examiner Martin J Angebranndt and Attorney James Duzan on February 24, 2003 a provisional election was made WITHOUT traverse to prosecute the invention of group I, claims 1-6 and 13-18. Affirmation of this election must be made by applicant in replying to this Office action. The remaining claims are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 1725

Claims 1, 3, 4, 13, 15, and 16 are rejected under 35 U.S.C. 102(a) as being anticipated by USPN 6,221,690 to Taniguchi et al. Taniguchi et al describe (column 4, lines 41+) resist can be removed by a laser, and describe (column 3, line 35) a BGA or ball grid array, and describe (e.g., column 1, line 22) encapsulated work pieces, and describe (column 5, line 47+) YAG and excimer lasers.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,221,690 to Taniguchi et al in view of USPN 6,329,606 to Freyman et al. Freyman et al describe well known automolding and the use thereof with the process and apparatus of Taniguchi et al would have been obvious at the time applicant's invention was made to a person of ordinary skill in the art because it provides efficient automation in manufacture.

Claims 5, 6, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,221,690 to Taniguchi et al in view of USPN 6,415,977 to Rumsey. Rumsey describes the well known vision scan system in substrate manufacture. The use of a vision system in the Taniguchi et al process and system would have been obvious at the time applicant's invention was made to a person of ordinary skill in the art because it provides efficient automation quality manufacture.

Art Unit: 1725

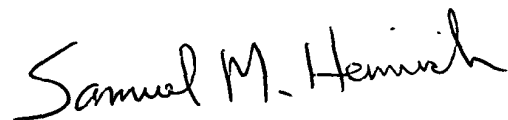
***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Fredriksen et al and Kono et al pertain to substrate manufacture.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel M Heinrich whose telephone number is 703 308 1168. The examiner can normally be reached on M-TH.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G Dunn can be reached on 703 308 3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0651.



Samuel M Heinrich  
Primary Examiner  
Art Unit 1725

SMH  
April 24, 2003